REMARKS

Regarding the Information Disclosure Statement:

The Examiner has indicated that the Information Disclosure Statement (IDS) filed on May 05, 2006, has not been considered.

Applicants respectfully submit that pursuant to 37 C.F.R. §1.97(c) the IDS only needed to be accompanied by one of: a statement under 37 C.F.R. §1.97(e), or the fee set forth in 37 C.F.R. §1.17(p). The IDS of May 05, 2006, was filed along with a reply to the non-final Office action of February 02, 2006. The reply made specific reference to the IDS on page 6. More importantly, the reply requested that the USPTO charge any shortage in fees to Deposit Account 14.1437. Thus, all requirements of 37 C.F.R. §1.97 were met, and the IDS should have been entered and considered.

Applicants respectfully request that the Examiner enter and consider the IDS filed on May 05, 2006.

Regarding the Restriction Requirement:

The Examiner has maintained the restriction requirement, but has modified the grounds for the requirement, arguing that the Markush group of claim 1 is directed to independent or distinct species, which are not obvious variants of each other based on the current record, "because as disclosed the different species have mutally exclusive characteristics for each identified species."[1]

As expressed in the reply to the restriction requirement filed August 27, 2007 "[t]he burden is on the Examiner to provide an example to support the determination that the inventions are distinct ....."[2] The Examiner has not met this burden, because "[a] mere statement of conclusion is inadequate. The reasons upon which the conclusion is based should be given."[3]

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[1] Page 2, lines 17 – 18 and page 3, lines 3 – 5 of the Office action mailed November 13, 2007.
[2] MPEP § 806.05(j).
[3] MPEP §808.01.

Regarding the Office Action:

In the non-final Office Action of November 13, 2007, the Examiner rejected:

I. claims 1, 5, and 24 – 41 under 35 U.S.C §102(b) over *Wang et al.* (US 6,045,899);

II. claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(e) or 35 U.S.C §103(a) over *Deitzen et al.* (US 7,045,082) [corresponding to EP 1333051];

III. claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Nintz et al.* (US 5,084,484); and

IV. claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Bland et al.* (US 5,017,622).

Regarding Rejection I:

The Examiner should withdraw the rejection of claims 1, 5, and 24 – 41 under 35 U.S.C §102(b) over *Wang et al.* (US 6,045,899).

The *Wang et al.* reference relates to a highly asymmetric, hydrophilic microfiltration membrane with high surface porosity. Figure 2b shows the coarse pored surface of the membrane and Figure 2c shows the membrane in cross section. According to the Examiner, these figures show "foam portions … wherein the open-cell factor for the foam is at least 75%, and wherein the foam has a cell size well over 100 μm."[4]

To the contrary, applicants respectfully submit that, as expressed in the specification, "[f]oams are materials which have open and/or closed cells distributed across their entire bulk, and which have an envelope density lower than that of the structural substance."[5] Figure 2b and figure 2c do not provide sufficient information to reasonably conclude that the *Wang et al.* reference discloses a foam. The figures do not make clear whether the cells are distributed across the entire bulk of the membrane. The figures do not make clear whether the *Wang et al.* membrane has an envelope density

[4] Page 4, lines 1 – 2 of the Office action mailed November 13, 2007.
[5] Specification, page 1, lines 9 – 11.

lower than that of the structural substance.

Applicants respectfully submit that the Examiner has not adhered to the appropriate legal standard. It is well-settled that "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'"[6] Thus, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."[7] The Examiner's suggestion that "the coarse pores surface of the membrane portion, such as per, for example, figures 2b and 2c, clearly showing foam portions with wherein [*sic*] the open-cell factor for the foam is at least 75%, and wherein the foam has a cell size well over 100 μm"[8] lacks any basis in fact and/or technical reasoning. Thus, the present rejection is in error.

Moreover, the *Wang et al.* membrane is produced by a process that could not result in a foam. First, according to *Wang et al.*, the membrane is prepared from a solution comprising a mixture of a sulfone polymer and a hydrophilic polymer. "The polymer solution is typically cast into a thin film, exposed to a gaseous environment for a predetermined period of time, then quenched in a nonsolvent."[9] Next, "... the cast film should be exposed to air sufficiently long to induce the formation of large surface pores...."[10] Finally, "... the cast dispersion or solution is quenched."[11] "The quenching liquid is commonly water."[12] The reference makes no mention of foaming a melt of the mixture to obtain a foam.

The second reason that the *Wang et al.* membrane is produced by a process that could not result in a foam is that the casting solution temperatures are between about

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[6] MPEP §2112, citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).
[7] *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).
[8] Page 4, lines 1 – 2 of the Office action mailed November 13, 2007.
[9] Column 11, lines 54 – 56 of US 6,045,899.
[10] Column 12, lines 28 – 31 of US 6,045,899.
[11] Column 12, lines 16 – 17 of US 6,045,899.
[12] Column 12, lines 19 – 20 of US 6,045,899.

20°C and 35°C, the quench bath temperatures are between about 20°C and 70°C.[13] According to the specification, "an open-cell foam is obtained only if the temperature lies with [a] very narrow temperature range ...."[14] More specifically, "[i]f the plastic used in the process of the invention comprises polyether sulfone 3010 E from BASF, the temperature during foaming is from 252 to 270°C...."[15] It should be clear, therefore, that the temperatures disclosed with regard to the *Wang et al.* membrane could not result in a foam.

Regarding Rejection II:

The Examiner should withdraw the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(e) or 35 U.S.C §103(a) over *Deitzen et al.* (US 7,045,082) [corresponding to EP 1333051]

The *Deitzen et al.* reference relates to a process for producing foam webs by foam extrusion of a mixture of a polysulfone or polyether sulfone and a volatile blowing agent, where the blowing agent is water or a mixture of water with an inert gas or organic liquid, e.g. an alcohol or a ketone. The Examiner has acknowledged that the reference does not disclose the cell size, the open cell content, or extrudability, but the Examiner argues that since the "identical processing conditions [are] disclosed in the reference ... the claimed parameters are believed to have been inherently met...."[16]

Again, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."[17] No such showing has been made. Thus, the present rejection is in error.

Moreover, applicants respectfully submit that the requisite showing cannot be made. According to the specification, "an open-cell foam is obtained only if the temperature lies within [a] very narrow temperature range ...."[18] More specifically, "[i]f

[13] *See* Column 12, lines 38 – 42 of US 6,045,899.
[14] Specification, page 7, lines 20 – 21.
[15] Specification, page 7, lines 25 – 27.
[16] Page 5, lines 5 – 7 of the Office action mailed November 13, 2007.
[17] *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis added).
[18] Specification, page 7, lines 20 – 21.

the plastic used in the process of the invention comprises polyether sulfone 3010 E from BASF, the temperature during foaming is from 252 to 270°C...."[19] On the other hand, the temperature ranges utilized in the *Deitzen et al.* reference are from 243.8°C to 250°C. Thus, when the Examiner's theory of inherency is evaluated on the basis of fact and technical reasoning, it is clear that the *Deitzen et al.* foam does not inherently have an open-cell factor of at least 75% as claimed in claim 1 of the present invention.

Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention.[20] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(e) over *Deitzen et al.* should be withdrawn.

Since the reference provides no guidance regarding the desirability of an open-celled foam, and no guidance regarding the modifications that would be necessary to produce an open-cell foam, applicants respectfully submit that at the time the present invention was made, a skilled artisan had no "apparent reason to combine ... known elements in the fashion claimed."[21] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §103(a) over *Deitzen et al.* should be withdrawn.

Regarding Rejection III:

The Examiner should withdraw the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Nintz et al.* (US 5,084,484)

The Examiner acknowledges that "the reference does not disclose a range of termperatues, [at which the claimed foams could be obtained, but argues that] the reference illustrate[s] some embodiments in which the processing temperatures and the amounts of blowing agents appear to correspond to the conditions for obtaining open cell foams...."[22] As discussed above, "[i]nherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of

[19] Specification, page 7, lines 25 – 27.
[20] *See, RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984).
[21] *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. ___ (2007), Slip op. at 14., 127 S.Ct. 1727, 1741 (2007).
[22] Page 8, lines 1 – 4 of the Office action mailed November 13, 2007.

circumstances is not sufficient.'"[23]

The present specification explains that "the open-cell factor increases with temperature within a narrow temperature range. However, if the temperature rises above a certain value, the foam then collapses."[24]

The *Nintz et al.* reference provides no temperature range, which gives a person skilled in the art information for obtaining a foam having a high open-cell factor. For example, the polether ketones used in examples 1 to 4 of the *Nintz et al.* reference have melting points in the range of 300 to 400°C, and a glass transition temperatures in the range of 130°C to 200°C. The Examiner acknowledges that "the processing temperatures in all of the illustrative examples are about 35 – 55 [°]C higher than the melting temperatures of the corresponding polymers..."[25] In other words, the foaming temperature utilized according to the *Nintz et al.* reference is more than 100°C higher than the glass transition temperature of the thermoplastics employed.

On the other hand, according to the examples of the present invention a polyether sulfone having a glass transition temperature of 225°C is foamed. The foaming temperature is about 25 to 30°C higher than the glass transition temperature of the thermoplastics employed. Again, the present specification explains that "the open-cell factor increases with temperature within a narrow temperature range. However, if the temperature rises above a certain value, the foam then collapses."[26]

Thus, when the Examiner's theory of inherency is evaluated on the basis of fact and technical reasoning, it is clear that the *Nintz et al.* reference does not disclose foams having an open-cell factor of at least 75%.

Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention.[27] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Nintz et al.* should be withdrawn.

Since the reference provides no guidance regarding the desirability of an open-celled foam, having an open-cell factor of at least 75%, and no guidance regarding the

[23] MPEP §2112, citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).
[24] Specification, page 7, lines 17 – 19.
[25] Page 6, lines 9 – 11 of the Office action mailed November 13, 2007.
[26] Specification, page 7, lines 17 – 19.
[27] *See, RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984).

modifications that would be necessary to produce such an open-cell foam, applicants respectfully submit that at the time the present invention was made, a skilled artisan had no "apparent reason to combine ... known elements in the fashion claimed."[28] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Nintz et al.* should be withdrawn.

Regarding Rejection IV:

The Examiner should withdraw the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Bland et al.* (US 5,017,622).

The *Bland et al.* reference is directed closed-cell foams produced from sulfone polymers and mixtures of sulfone polymers with various non-sulfone polymers. The Examiner has acknoweldged that this reference fails to disclose "the extrudability of the disclosed thermoplastics or the open cell content of the resulting foams."[29] However, the Examiner argues that these features would be inherent based on the similarity between the polymers and the processing conditions.

The Examiner's allegation of inherency is explicitly refuted in column 5, lines 38 – 41 of the reference itself, where *Bland et al.* state that "[t]he products possess a highly uniform fine-cell structure consisting for the most part of thin-walled individually closed cells ...."[30] As explained in the present specification, "[t]he gas cells within the foams of the invention have connections to each other, and this is therefore an open-cell foam."[31]

Furthermore, according to example 1 of the *Bland et al.* reference, the die temperature is about 220°C and the foaming temperature according to example 4 is 225°C. Again, according to the present specification, "an open-cell foam is obtained only if the temperature lies with [a] very narrow temperature range ...."[32] More specifically, "[i]f the plastic used in the process of the invention comprises polyether sulfone 3010 E from BASF, the temperature during foaming is from 252 to 270°C...."[33]

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[28] *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. ___ (2007), Slip op. at 14., 127 S.Ct. 1727, 1741 (2007).
[29] Page 7, lines 1 – 2 of the Office action mailed November 13, 2007.
[30] Column 5, lines 38 – 41 of US 5,017,622.
[31] Specification, page 4, lines 12 – 14.
[32] Specification, page 7, lines 20 – 21.
[33] Specification, page 7, lines 25 – 27.

Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention.[34] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) over *Bland et al.* should be withdrawn.

Since the reference provides no guidance regarding the desirability of an open-celled foam, and no guidance regarding the modifications that would be necessary to produce an open-cell foam, applicants respectfully submit that at the time the present invention was made, a skilled artisan had no "apparent reason to combine … known elements in the fashion claimed."[35] Thus, the rejection of claims 1, 5, 14, and 24 – 41 under 35 U.S.C §102(b) or 35 U.S.C §103(a) over *Bland et al.* should be withdrawn.

In Conclusion:

The present application is in condition for allowance. Applicants request favorable action in this matter. In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner is welcome to contact the undersigned by phone to further the discussion.

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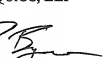

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[34] *See, RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984).
[35] *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. ___ (2007), Slip op. at 14., 127 S.Ct. 1727, 1741 (2007).